



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,789	01/13/2006	Tomoyuki Horiguchi	TIP-05-1845	3315
35811 7590 12/21/2010 IP GROUP OF DLA PIPER LLP (US) ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103				
EXAMINER				
GUGLIOTTA, NICOLE T				
ART UNIT		PAPER NUMBER		
1783				
NOTIFICATION DATE		DELIVERY MODE		
12/21/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pto.phil@dlapiper.com

# Office Action Summary

Application No.

10/564,789

Applicant(s)

HORIGUCHI ET AL.

Examiner

NICOLE T. GUGLIOTTA

Art Unit

1783

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 29, 32 - 38, 40, 42 - 45, 47 - 48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29, 32 - 38, 40, 42 - 45, 47 - 48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 30, 2010 has been entered.

***Examiner's Note***

The Examiner acknowledges the amendments to claims 29, 40 & 43, as well as the cancellation of claim 39. The Examiner confirms no new matter has been added.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 29, 32 - 38, 40, 42 & 44 - 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusunose et al. (U.S. Patent No. 4,107,374), as evidenced by Kamath et al. ("Needle Punched Nonwovens").**

**Note: "Needle Punched Nonwovens", updated April 2004, can be found at:**

***<http://www.engr.utk.edu/mse/Textiles/Needle%20Punched%20Nonwovens.htm>***

Kusunose et al. teach the manufacturing of artificial leather made from a nonwoven fabric (Col. 1, Lines 1 - 9) (**claims 29 & 40**) comprising polyamide ultra-fine fibers (Col. 2, Lines 65 – 68) of 0.005 to 0.5 denier (decitex) (Col. 3, Lines 8 - 26) and 5 cm in length (Col. 12, Lines 49 – 50; Col. 13, Lines 47- 49; Col. 16, Lines 11 – 12; Col. 19, Lines 14 - 15; Col. 25, Lines 14 - 15; Col. 28, Lines 45 - 46 (**claims 32, 42 & 45**)). The nonwoven fabric is made by entangling fibers and fiber bundles and fiber bundles, which are formed from polyamide islands that are not dissolved in a solvent comprising a sea component (Applicant's "removing the sea component") in the drawing operation (Col. 3, Lines 58 – 63) (**claim 33**), and then applying needle-punching (Col. 30, Lines 10 – 12) and hydro-entanglement treatments at a pressure of 10 to 300 kg/cm<sup>2</sup> (0.98 - 29.4 MPa) (Col. 8, Line 34) a plurality of times (Example 22; Col. 29, Line 55 – Col. 30, Line 55) (**claims 29, 33 & 40**). In addition, Kusunose et al. teach the nonwoven fabric, without the presence of an elastomer, had a density of 0.27 (Col. 30, Lines 24 - 26). The weight per unit area of the non-woven fabrics taught by Kusunose et al. range from 145 g/m<sup>2</sup> (Col. 16, Line 32) to 1200 g/m<sup>2</sup> (Col. 9, Line 35).

When considering the uniformity of entanglement of the fabric in the thickness direction, the Examiner notes Kusunose et al. teach treating the fabric with wet jets ("hydro-entanglement") a plurality of times (Example 22), which is the same treatment Applicant applied for achieving uniform entanglement in the thickness direction (specification, pg 21). It has been held that where the claimed and prior art products

are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). MPEP 2112 [R-3] states:

The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

Kusunose et al. do not explicitly teach a tensile strength of 70 N/cm or more, a 10% modulus in the length direction of 8 N/cm or more and tear strength of 3 to 50 N (claims 29 & 40), or result of an abrasion test (claim 44).

However, the apparent density of the nonwoven fabric is controllable through controlling the process. Kusunose et al. explicitly teach needle-punching increases the density of the nonwoven fabric (Col. 17, Lines 25 – 28). The needle-punching taught by Kusunose et al. is in the range of 500 needles/in<sup>2</sup> (76.9 needles/cm<sup>2</sup>) (Col. 27, Lines 46 – 47) to 3000 needles/in<sup>2</sup> (461 needles/cm<sup>2</sup>) (Col. 17, Lines 22 – 24). Kusunose et al. explicitly teach "the larger the needling number, the smoother the sheet surface (Col. 20, Lines 50 – 53)". Although the punching density for the needle-punching treatment is not within Applicant's claimed range, a punching density of 500 needles/cm<sup>2</sup> or more,

Kusunose et al. clearly teach increasing the punching density for a smoother fabric surface, which is a result effective variable and therefore within the control of the skilled artisan (**claims 29 & 40**). See MPEP § 2144.05.II.

Kamath et al. further supports this known fact, teaching “the more the needles penetrate the web the more dense and strong the web becomes generally” (last paragraph of pg 3). In addition, Kamath et al. teach other factors during the needling process, such as finer needles, as well as finer and longer fibers directly affect the density and strength of the needled web (last two paragraphs of pg 7). The strength and density of a fabric also directly affect the abrasion resistance. As such, properties such as apparent density, tensile strength, modulus, tear strength and abrasion resistance are result effective variables and therefore within the control of the skilled artisan (**claims 29, 40 & 44**). See MPEP § 2144.05.II.

When **claim 34** is considered, the Examiner notes the apparent density of the nonwoven fabric after needle punching is irrelevant because it is an intermediate product and Applicant's claim are directed towards the final product. After applying other entanglement methods after needle-punching, such as hydro-entanglement, the apparent density will change. Therefore, the apparent density of the non-woven fabric after needle-punching is irrelevant to the final structure of the nonwoven fabric.

In regard to **claim 35**, Kusunose et al. teach a nozzle diameter of 0.05 mm. Absent a showing of the criticality of 0.06 mm for a nozzle diameter during hydro-entanglement treatment of the fibers, it would be reasonable to believe entanglement of the fibers with a water jet nozzle of 0.05 mm would produce the same non-woven fabric

comprising entangled fibers as a nozzle of 0.06 mm. Claims that differ from the prior art only by slightly different (non-overlapping) ranges are *prima facie* obvious without a showing that the claimed range achieves unexpected results relative to the prior art. See *In re Woodruff*, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990) See also *In re Huang*, 40 USPQ2d 1685 (Fed. Cir. 1996) (claimed ranges of a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art), *In re Boesch*, 205 USPQ 215 (CCPA 1980) (discovery of optimum of result effective variable in known process is ordinarily within the skill of art) and *In re Aller*, 105 USPQ 233 (CCPA 1955) (selection of optimum ranges within prior art general conditions is obvious). See MPEP § 2144.05.II.

Considering **claim 36**, the Examiner notes this limitation to be a product-by-process claim. As such, the claim is limited only by the structure implied by the steps. Although Kusunose et al. teach forming the ultra-fine fibers before entanglement (needle-punching or hydro-entanglement), the final structure of the non-woven fabric is the same as that claimed by the Applicant.

In regard to **claim 37**, Kusunose et al. teach cutting a layer of bundled filament along the longitudinal axis to form a flat sheet, prior to treatment with the jets of water ("hydro-entanglement") (Example 25; Col 33, Lines 20 - 26).

In regard to **claim 38**, Kusunose et al. teach pressing the nonwoven fabric from 5 mm (Col. 24, Line 59) to 3.7 mm (Col. 25, Line 36), which means the fabric was pressed 0.74 times in thickness after the hydro-entanglement treatment.

Claims 33 – 38 define the product by how the product was made. Thus, claims 33 – 38 are product-by-process claims. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having fibers which were entangled and possibly pressed to form a densified nonwoven fabric. The reference suggests such a product.

Examiner refers applicant to MPEP § 2113 [R - 1] regarding product-by-process claims. "The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product or the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777, F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citation omitted)

Once the examiner provides a rationale tending to show that the claimed product appears to be same or similar to that of the prior art, although produced by a different process, the burden shifts to the applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218, USPQ 289, 292 (Fed. Cir. 1983)

**3. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusunose et al., in view of Nakamae et al. (U.S. Patent No. 4,426,421).**

Kusunose et al. are silent in regard to the artificial leather sheet of their invention raised on at least one surface with sand paper or brush.



Nakamae et al. teach providing a natural suede-like appearance for artificial leather by raising the surface of a non-woven fabric (Col. 2, Lines 6 – 9) with a brush (Col. 9, Lines 39 - 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a natural suede-like artificial leather appearance to the invention taught by Kusunose et al. by raising the fibers on the surface of the fabric with a brush, based on the teachings of Nakamae et al.

Claim 43 defines the product by how the product was made (i.e. with sand paper or brush). Thus, claim 43 is a product-by-process claim. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having a raised pattern on at least one surface. The reference suggests such a product.

**4. Claims 47 – 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusunose et al., in view of Katayama et al. (U.S. Patent No. 6,537,660 B2).**

Kusunose et al. are silent in regard to the presence of small particles in their manufactured non-woven fabric.

However, Katayama et al. disclose an ultra-fine non-woven web used as artificial leather (Col. 8, Line 31) comprising polyester or polyamide fibers (Col. 6, Lines 9 - 38), and particles of 0.1 – 5  $\mu\text{m}$  for use as stabilizers, lubricants, absorbers, antioxidants,

antistatic agents, flame retardants, plasticizers, colorants, and crystallization governors (Col. 6, Lines 44 - 60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include small particles such as stabilizers, lubricants, and antistatic agents to the artificial leather taught by Kusunose et al. in order to improve dyeability, as well as maintain the strength and light-weight properties of the artificial leather (Col. 1, Lines 62 - 64), based on the teachings of Katayama et al.

### ***Response to Arguments***

5. Applicant argues, "...independent Claims 29 and 40 have been amended to recite that the ultra-fine fibers are uniformly entangled with each other in the thickness direction. This is important since Kato not only fails to disclose such uniform entanglement, but actually leads those skilled in the art away from such uniform entanglement. The reasons for this are quite clear, namely Kato teaches that the ultra-fine fibers are non-uniformly entangled" (Remarks, Pg 4).

EXAMINER'S RESPONSE: Applicant's arguments with respect to the rejection(s) of claim(s) 29, 32 - 38, 40, 42 - 45 and 47 - 48 under 35 USC §102 over Kato have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kusunose et al. (U.S. Patent No. 4,107,374).

6. Applicant argues, "The Applicants have amended claim 40 as noted above to include the tensile strength of 70 N/cm or more in the same manner of Claim 29. This is important with respect to Tadokoro. In that regard, Tadokoro fails to disclose the Applicants' claimed range of 70 N/cm or more. However, tensile strengths are disclosed for the Examples and Comparative Examples in Tadokoro. This can be seen in Table 1 wherein Examples 1 - 3 have tensile strengths of 3.3, 3.5 and 3.1 kg/cm, respectively, and Comparative Examples 1 - 4 have tensile strengths of 2.0, 2.4, 3.5 and 3.2 kg/cm, respectively....Examples have tensile strengths ranging between 3.0 and 3.9 kg/cm...The tensile strength range of 3.0 and 3.9 kg/cm corresponds to a range of 29 to 38 N/cm. It can thus be quickly seen that those tensile strengths are far less than the Applicants' claimed range of 70 N/cm or more. In fact, most of the tensile strengths of the Tadokoro products are about half of the Applicants' minimum claimed tensile strength. The Applicants therefore respectfully submit that their claimed artificial leather sheets and nonwoven fabrics are completely different from Tadokoro and are not in any way suggested by Tadokoro" (Remarks, Pgs 5 – 6).

EXAMINER'S RESPONSE: Applicant's arguments with respect to the rejection(s) of claim(s) 29, 32, 39, 40 and 44 - 45 under 35 USC §102 over Tadokoro have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kusunose et al. (U.S. Patent No. 4,107,374).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - F 8:30 a.m. - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1786

/NICOLE T GUGLIOTTA/  
Examiner, Art Unit 1783